

**Notice of Allowability**

Application No.

10/666,549

Examiner

Tung S. Lau

Applicant(s)

SOHL ET AL.

Art Unit

2863

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 12/07/2005.
2. ☒ The allowed claim(s) is/are 1-26.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received. /
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date ____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>See office action</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material  | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance             |
|   | 9. <input type="checkbox"/> Other ____.  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/07/2005 has been entered.

### **Information Disclosure Statement**

2. Information Disclosure Statement filed on 12/07/2005 is acknowledged by the examiner; A copy of a signed PTO-1449 attached with this office action.

### **Prior art cited**

3. Sahlgren et al. (U.S. Patent 5,946,094) discloses Apparatus for determining the curvature of an elongated channel, such as a drill hole in rock for instance, wherein the apparatus includes a probe which may be constructed for movement through the channel and to assume the curvature of the channel at the different positions into which the probe is moved along the channel, wherein the probe includes means for sensing the curvature of the probe, and thus also the curvature of the channel, between at least two longitudinally spaced positions (A, B) on the probe, and wherein the apparatus can be connected to means for determining the extension of the channel by registering curvature of the probe, for instance in different positions of the probe along the channel. The probe

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means include an optical fibre section which is connected to a flexible probe body arranged in the probe, wherein the optical fibre section extends parallel with and at a constant distance from the bending neutral axis of the probe body, such that strain acting in the fibre section will constitute a measurement of the bending or curvature of the probe body in an axial plane that includes the fibre section, The optical fibre section has two partial reflection means, for instance gratings, at said positions along the probe. Means are connected to the optical fibre section for interferometric determination of the change in distance between the partial reflection means in the fibre section. Means are provided for compensating for the influence of temperature on the change in distance between the partial reflection means.

***Allowable Subject Matter***

4. Claims 1-26 are allowed.

***Reasons for Allowance***

5. The following is an examiner's statement of reasons for allowance:

Independent claims 1, 21 and 23 contain allowable subject matter. None of the prior art of record shows or fairly suggests the claimed invention.

Regarding claim 1:

The primary reason for the allowance of claim 1 is the inclusion of the method steps of end-to-end environmental data acquisition including a moveable direct reading sensors are in contact direct reading with soil and acquiring next data

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from moveable direct reading sensors. It is these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Claims 2-20 and 24 are allowed due to their dependency on claim 1.

Regarding claim 21:

The primary reason for the allowance of claim 21 is the inclusion of the method steps of end-to-end environmental data acquisition including a moveable direct reading sensors and a three non-temporal dimensions. It is these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.

Claims 22 and 25 are allowed due to their dependency on claim 21.

Regarding claim 23:

The primary reason for the allowance of claim 23 is the inclusion of the method steps of environmental data acquisition including a moveable direct reading sensors wherein the moveable direct reading sensors are place in environmental subsurface and moveable direct reading sensors are contact with soil. It is these features found in the claim, as they are claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes this claim allowable over the prior art.


Claim 26 is allowed due to their dependency on claim 23.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung S Lau whose telephone number is 571-272-2274. The examiner can normally be reached on M-F 9-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone numbers for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TL



John Barlow  
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